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AGO D/A ltr, 11 Jun 1980

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IN REPLY REFER TO

AGDA (M) (7 Nov 69)

FOR OT UT 69B044

3 December 1969

SUBJECT: Senior Officer Debriefing Report: COL Alton G. Post, CO, Aviation Materiel Management Center, Period 18 October 1968 to 7 January 1969, CO, 34th General Support Group, Period 7 January 1969 to 15 October 1969

SEE DISTRIBUTION

1. Reference: AR 1-26, subject, Senior Officer Debriefing Program (U) dated 4 November 1966.
2. Transmitted herewith is the report of COL Alton G. Post, subject as above.
3. This report is provided to insure appropriate benefits are realized from the experiences of the author. The report should be reviewed in accordance with paragraphs 3 and 5, AR 1-26; however, it should not be interpreted as the official view of the Department of the Army, or of any agency of the Department of the Army.
4. Information of actions initiated under provisions of AR 1-26, as a result of subject report should be provided ACSFOR OT UT within 90 days of receipt of covering letter.

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Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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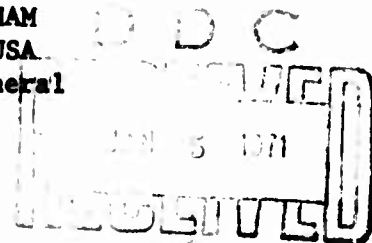
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2

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**DEPARTMENT OF THE ARMY
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AVHGC-DST

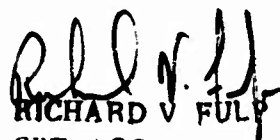
27 OCT 1969

**Assistant Chief of Staff for Force Development
Department of the Army
Washington, D.C. 20310**

1. Attached are three copies of the Senior Officer Debriefing Report prepared by Colonel Alton G. Post who served consecutively as Commanding Officer, Aviation Materiel Management Center and Commanding Officer, 34th General Support Group (Aircraft Maintenance and Supply) during the period 18 October 1968 to 15 October 1969.
2. Colonel Post is recommended as a candidate guest speaker at appropriate service schools.

FOR THE COMMANDER:

1 Incl
as (trip)
2 cy wd HQ, DA


RICHARD V. FULP
CPT, AGC
Assistant Adjutant General

Inclosure

1

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 34TH GENERAL SUPPORT GROUP (AM&S)
APO 96309

AVGF

SUBJECT: Senior Officers Debriefing Program

Commanding General
United States Army Vietnam
ATTN: AVHGC-DST
APO 96375

1. References:

- a. Letter, Hq, USARV, AVHAG-FO, subject as above, dated 24 September 1969.
- b. AR 1-26
- c. USARV Regulation 1-3

2. The final briefing report (RCS-CS FOR-74) as required by above references is submitted.


ALTON G. POST
COL, TC
Commanding

DEBRIEFING REPORT

(RCS-CS FOR-74)

Country: Republic of Vietnam

Debrief Report By: Alton G. Post
Colonel, TC, 4731-16-2488

Duty Assignments: FROM: 18 October 1968 TO: 7 January 1969

Commanding Officer
Aviation Materiel Management Center
APO San Francisco 96309

FROM: 7 January 1969 TO: 15 October 1969

Commanding Officer
34th General Support Group (Aircraft Maintenance & Supply)
APO San Francisco 96309

Date of Report: 2 October 1969

References:

- a. Army Regulation 1-26, 4 Nov 66
- b. USARV Regulation 1-3, 1 June 68
- c. Ltr, GPLO-SM HQ, USARPAC, Subject: Aviation Maintenance Operations in USARV, dtd 31 May 1968.
- d. Annex F (Aviation Supply System) and Annex J (Aviation Maintenance System) to the USARV Logistics Review, expected to be distributed by January 1970.

Introduction: This report is concerned with the logistical support of Army aircraft in a counterinsurgency environment. It will be of primary interest to those who are charged with planning for the maintenance and supply of Army aircraft engaged in support of major combat forces.

This debriefing report is organized in the format of a stand-up type oral briefing to facilitate its presentation to larger staffs or seminars and to interested schools or institutes. The briefing is divided into two parts as described below:

Part I: Provides background data on the 34th General Support Group, to include its organization, command structure, mission, and accomplishments.

Part II: Commentary on the logistical support system for Army aircraft in RVN.

FOR OT UT

69B044

Inclosure



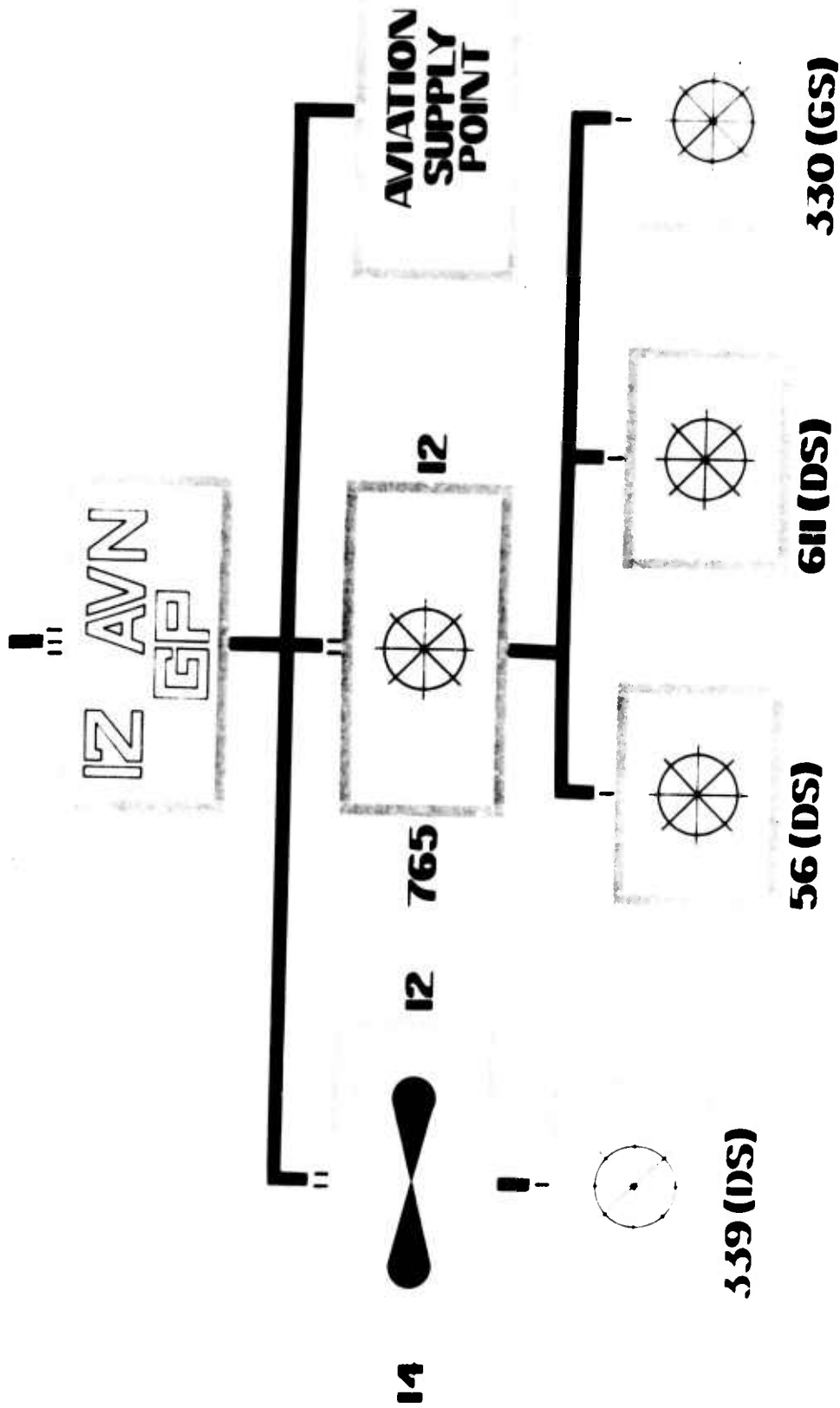
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PART I
34TH GENERAL SUPPORT GROUP BRIEFING

CHART 1 (34TH GROUP CREST)

This briefing will acquaint you with the operations of the 34th General Support Group in the Republic of South Vietnam. The 34th General Support Group is unique in that it is the only Aviation Maintenance and Supply Group in the US Army today. It was formed in Vietnam with in-country assets in January 1966.

USAFSC



JULY 1965
SUPPORTED 660 A/C

CHART 2 (EARLY ORGANIZATION)

Prior to formation of the Group, all aviation supply and maintenance support came under the US Army Support Command. The organization at that time consisted of two battalions, the 14th Transportation Battalion with one direct support company, and the 765th Transportation Battalion with two direct support companies and one general support company. Supply support was provided by an Aviation Supply Point at Tan Son Nhut which handled some 8000 lines. This organization, as of July 1965, supported 660 aircraft. General Norton, the Support Command Commander, recognized that this organization would not be capable of supporting the buildup projected for late 1965 and early 1966. He formed an ADHOC committee whose purpose was to develop an aviation logistic support organization capable of supporting this projected buildup. To the committee he provided two general guidelines.

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GUIDELINES FOR ORGANIZATION OF GROUP

8
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ONE STOP MAINTENANCE

ABILITY TO GROW

CHART 3 (ADHOC COMMITTEE GUIDELINES)

First, the organization should be structured to provide one-stop maintenance. By this was meant support at one location, not only for the aircraft, but also for its associated avionics and weapons systems. Secondly, that the organization have the capability to grow with the expanded requirements imposed by the projected buildup. With the completion of the committee's study effort, the 34th General Support Group was formed provisionally in November 1965 by a USARPAC General Order dated 14 January 1966.

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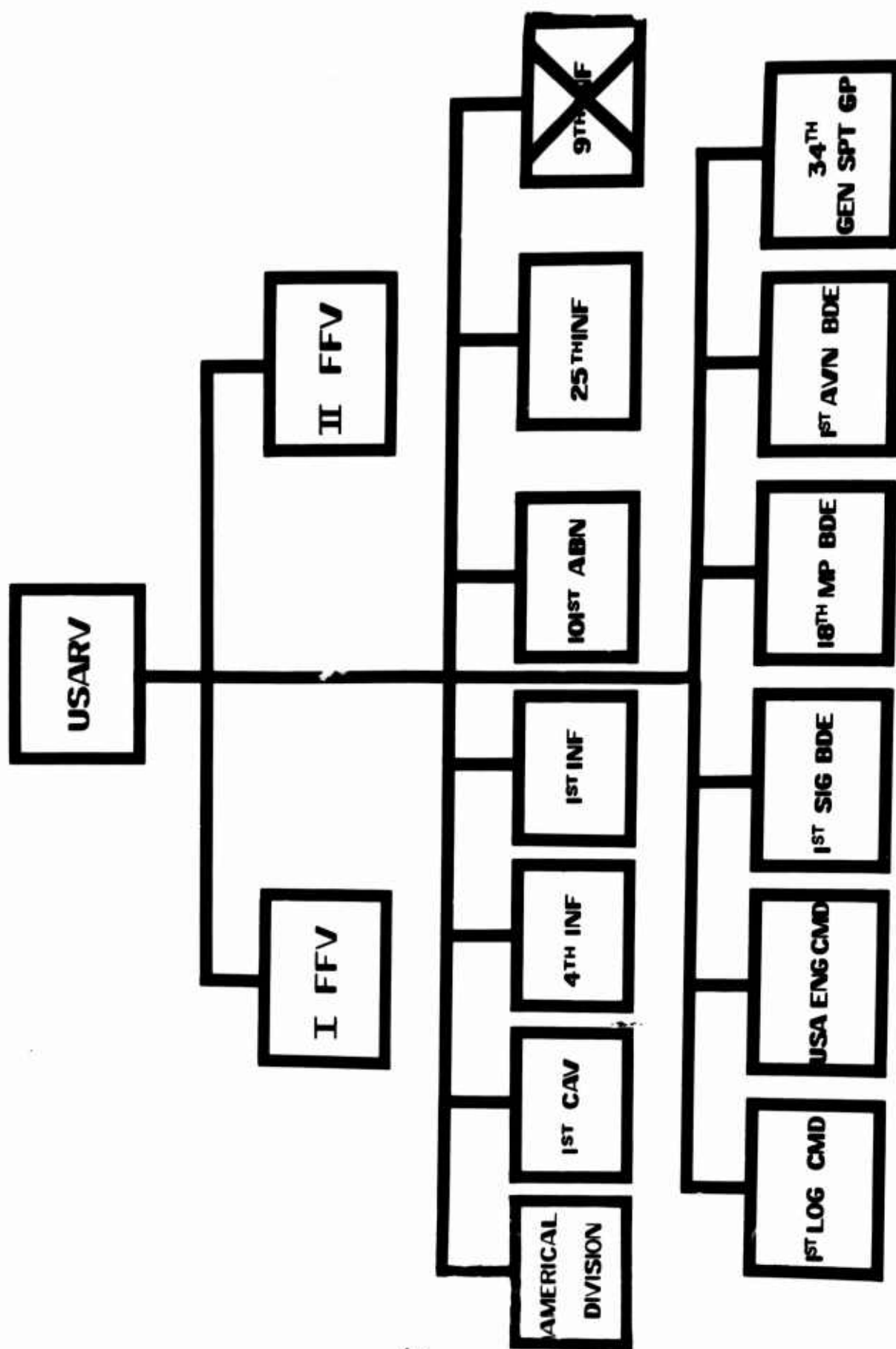


CHART 4 (USARV/GROUP RELATIONSHIP)

The Group was formed as a major subordinate command of USARV, answering directly to the Deputy Commanding General with primary staff supervision exercised by USARV G-4. In October 1967 the USARV Aviation Officer was assigned direct staff supervision over the activities of the Group. This relationship still exists today. Note 34th Group's position in the lower right hand corner of the organization schematic (facing page).

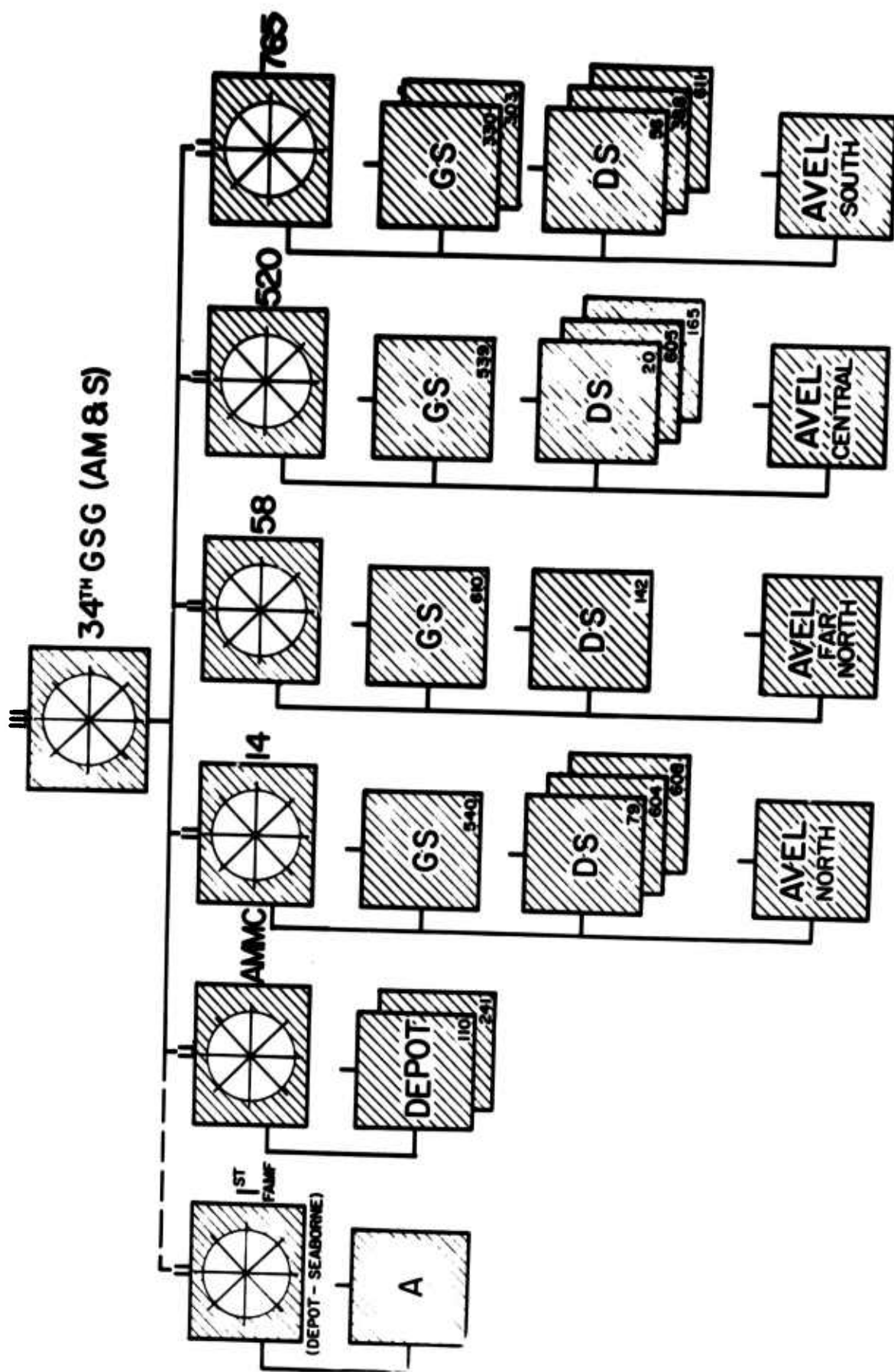
MISSION

**PROVIDE ARMY AIRCRAFT MAINTENANCE
AND SUPPLY SUPPORT (AIRCRAFT, AIRCRAFT
REPAIR PARTS, AVIONICS, AIRCRAFT ARMAMENT)
TO UNITED STATES AND OTHER FREE
WORLD MILITARY ASSISTANCE FORCES WITHIN
SOUTH EAST ASIA**

CHART 5 (GROUP MISSION)

This next chart presents the 34th Group mission: (Provide Army aircraft maintenance and supply support (aircraft, aircraft repair parts, avionics, aircraft armament) to the United States and other Free World military assistance forces within South East Asia.) The term "Army aircraft" is somewhat misleading because the Group supports related Navy, Marine and Air Force aircraft as well. The Group also supports the Koreans at Nha Trang, a Royal Thai Regiment at Bear Cat and the Australians at Vung Tau. The term South East Asia is used in lieu of Vietnam because supply support is also provided to a TC Detachment in Thailand.

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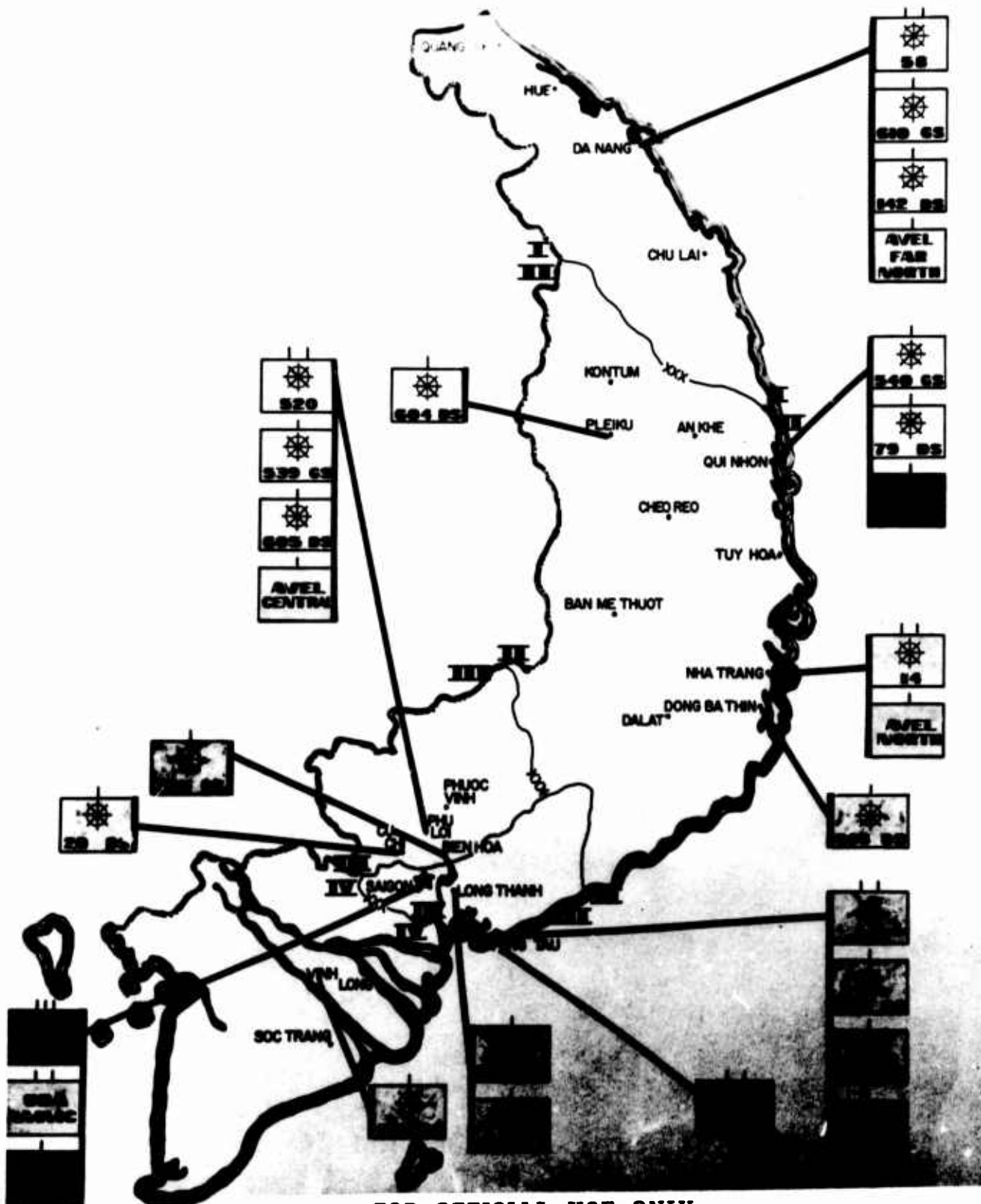


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CHART 6 (CURRENT ORGANIZATION)

This chart shows the current organization of the 34th Group. The Group consists of four aircraft maintenance and supply battalions, the Aviation Materiel Management Center, which will be covered later, and the Floating Aircraft Maintenance Facility. The FAMF is an AMC project under the operational control of the Group and provides the Group with a limited depot maintenance capability. The four battalions are organized to provide support on an area basis. The size of the area is dependent on the density of aircraft therein. Each battalion has one general support company with the exception of the 765th Transportation Battalion which has two. Also, each Battalion has three Direct Support Companies with the exception of the 58th Transportation Battalion which has only one and an Avionics & Electronics Company. The Avionics Electronics Companies are provisional companies formed out of the spaces in the DS and GS companies and cellular teams of the Group to provide general support in the avionics area. They were formed to provide optimum utilization of the Group's assets in the Avionics Field. In addition to this military structure, the Group is augmented by civilian personnel under three contracts, Lear Siegler, Lockheed and Dynallectron. These personnel bring to the Group the skills not normally found in the two-year soldier. Of particular importance are skills in sheet metal working, aircraft engine, avionics, and armaments repair, and the operation of computerized supply systems.

34TH GENERAL SUPPORT GROUP (AMES)



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CHART 7 (UNIT LOCATIONS)

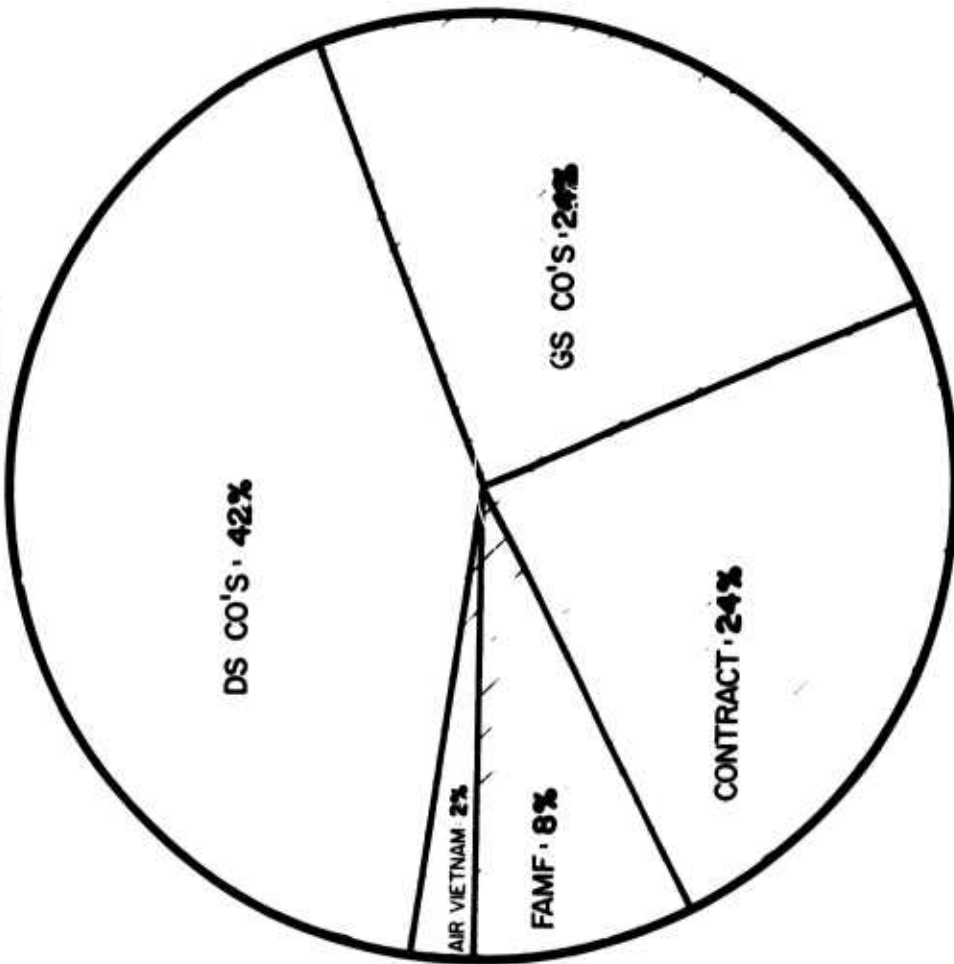
The 34th Group units operate side by side with their customers and are located throughout South Vietnam. The 34th Group Headquarters and the Headquarters of the Aviation Materiel Management Center are located at Saigon. The 58th Battalion, located at Da Nang, supports the 1st CTZ. All its units are with the battalion at Red Beach. The 2nd CTZ is supported by the 14th Transportation Battalion at Nha Trang with units at Pleiku, Qui Nhon and Dong Ba Thin. Because of the high density of aircraft in the 3rd CTZ, the zone was split - the northern sector is supported by the 520th Battalion at Phu Loi with units at Cu Chi and Bien Hoa. The southern sector and the 4th CTZ are supported by the 765th Battalion at Vung Tau with units at Long Thanh and Vinh Long. Finally, the FAMF, which is anchored in Vung Tau Bay, provides limited depot support to the Group as a whole. Not shown on this chart are the two depots operated by the Aviation Materiel Management Center, one at Saigon and the other at Qui Nhon.

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34th GENERAL SUPPORT GROUP

MONTHLY AIRCRAFT MAINTENANCE CAPABILITIES

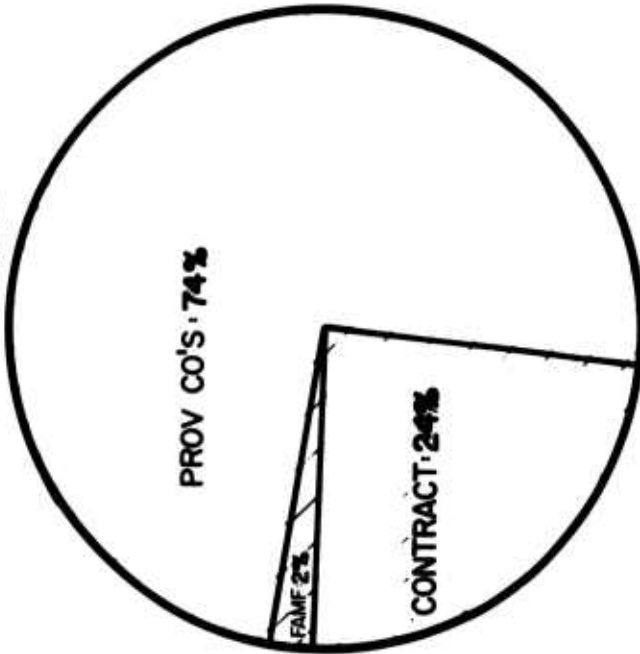
AIRCRAFT : 738,683



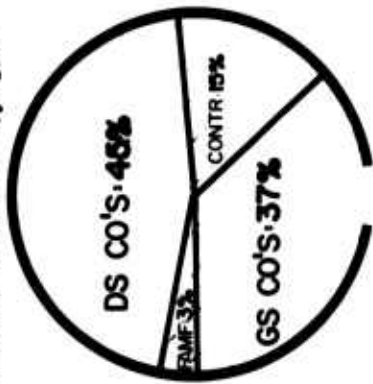
18

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AVIONICS: 91,190



ARMAMENT : 35,907



TOTAL 865,780 MAN-HOURS
AVAILABLE PER MONTH
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CHART 8, (MAINTENANCE MANPOWER CAPABILITY)

The Group has in excess of 800,000 manhours per month capability divided into the areas of aircraft, avionics and armament. The chart shows the contribution of each of the Group's elements to these areas. One contract not previously mentioned is the one with Air Vietnam. This is a Vietnamese contract managed by the Air Force from which the Group is allocated some 11,000 manhours per month. A majority of this time is presently being utilized to perform 12th periodic inspections, a major PE, on CH-47 helicopters.

AARTS

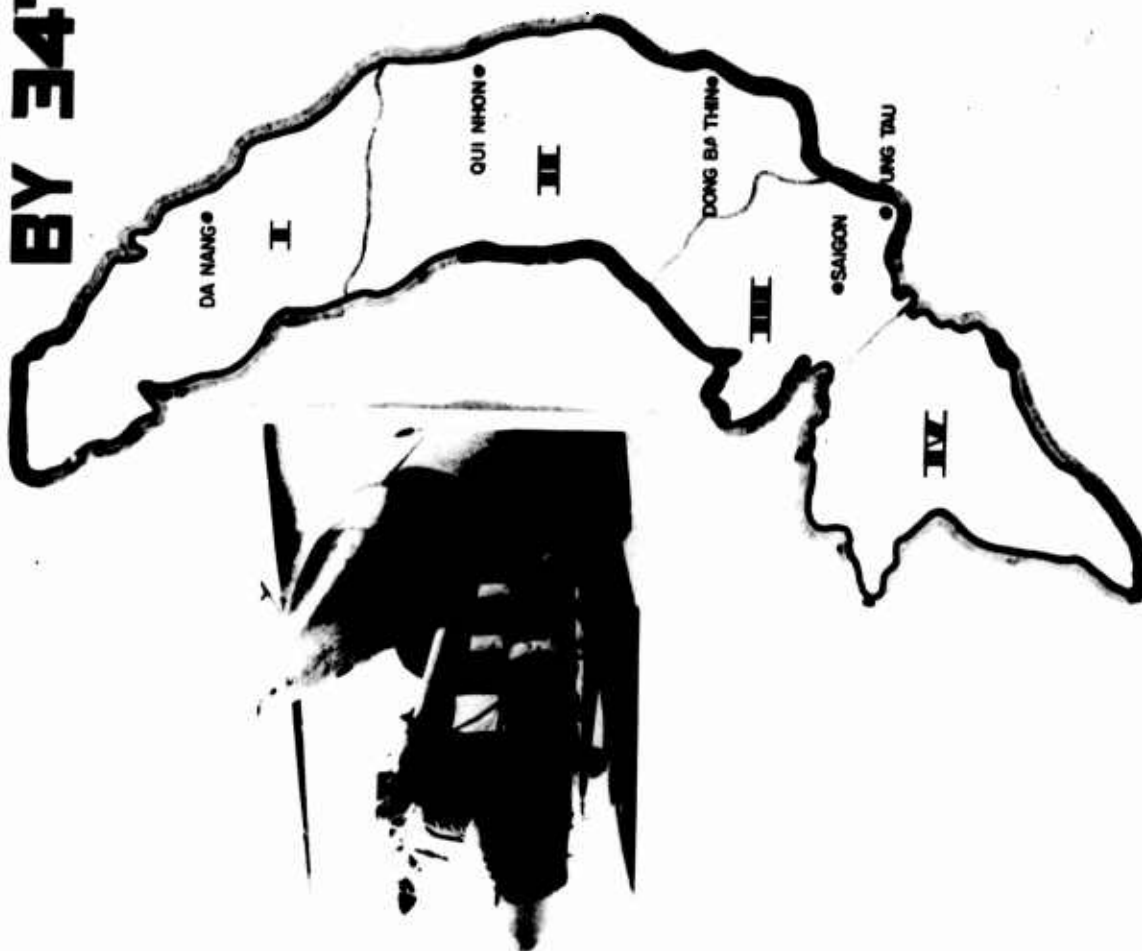
COURSE	COURSE LENGTH WEEKS	STUDENT INPUT PER CLASS	TOTAL GRADUATES FY 1969	PROJECTED FOR FY 1970	ACTUAL FOR FY 1970
AH-1G, UH-1C	2	20	* 408	560	82
UH-1D, H	2	20	436	472	73
OH-6A	2	20	492	560	105
CH-47	3	18	266	280	29
T-53-L-11	2	17	324	204	38
T-53-L-13	2	23	396	552	92
T-55-L-11	3	10	***	120	12
T-55-L-7	2	11	252	200	22
T-63	1	-	324	476	60
M-5, XM-156, M-21	1	15	** 339	120	27
XM-28, XM-18E1	1	15		240	34
XM-28, XM-18E1	1	10		160	21
M-5, XM-156, M-21	1	10		120	32
TECH SUPPLY	2	20	341	550	80
TECH INSPECTOR	2	20	***	560	74
CH-47 MAINT SUP	2		***		50
OTHER			566		
TOTAL			4142	5184	831

AS OF 3 SEP 69

CHART 9 (AARTS)

The 34th Group also operates a Refresher Training School located at Vung-Tau. As the title implies, this is not an MOS producing school. The prerequisites for attendance are to have the MOS for the course and have at least 6 months remaining in country. The school offers courses in: air-frame of the OH-6, UH-1, AH-1 and CH-47 aircraft and their associated engines; armament for both officers and enlisted; and supply directed at the detachment and company level. As of 3 September 1969, AARTS had graduated some 4142 students.

AIRCRAFT PROCESSING BY 34" GEN SPT GP



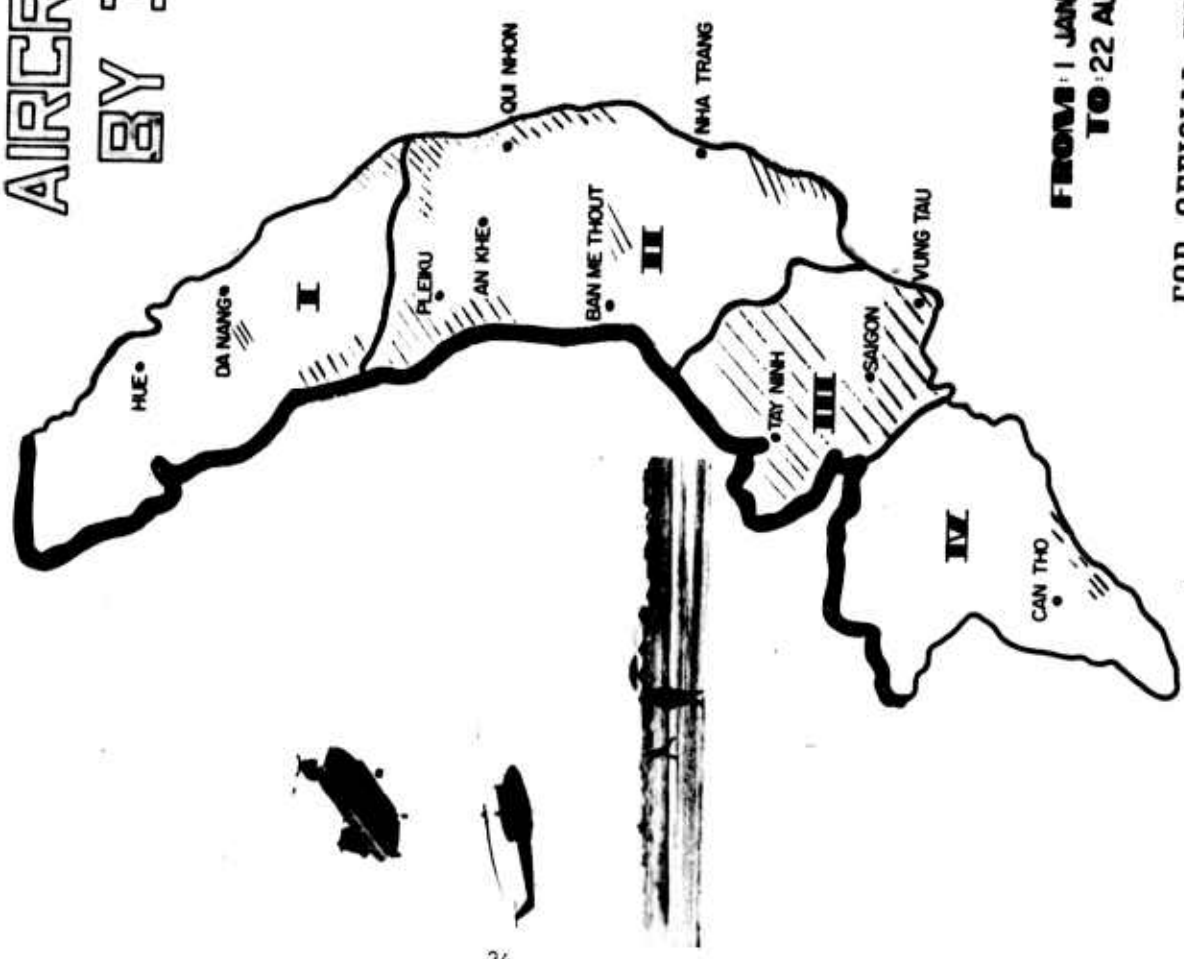
TYPE	MONTHLY AUG. FY 69	TOTAL FY 69	PROJECTED TOTAL FY 70
O-1	14.0	169	229
OV-1	6.2	74	67
U-1	2.5	30	51
U-6	1.2	14	58
U-8	.3	3	22
LOH	68.4	821	880
UH-1	206.6	2479	3205
AH-1	48.5	582	292
CH-47	24.5	294	283
CH-54	1.9	22	15
U-21	2.0	24	7
TOTAL	376.0	4512	5109

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CHART 10 (AIRCRAFT PROCESSING)

The 34th Group is charged with the responsibility of aircraft processing, that is, processing crash and battle damaged aircraft out of the country, as well as processing new and rebuild aircraft into the country. In order to perform this mission, 5 aircraft processing sites were established, one each at Da Nang, Qui Nhon, Dong Da Thin, Vung Tau and Saigon. The chart shows, by type, the average number of aircraft processed each month during FY 1969, the total number processed during FY 1969 and the projected processing requirements for FY 1970. It is obvious that if hostilities should terminate the projection for FY 70 will have to be revised.

AIRCRAFT RECOVERED BY 34TH GEN SPT GP



TYPE	NO		COST	
	RIGGED	EXTRACTED	RIGGED	EXTRACTED
UH-1	1217	649	297.02	157.90
AH-1G	99	31	36.16	11.32
CH-6A	144	137	11.44	10.88
CH	85	80	4.61	4.35
OV-1	1	0	.96	0
O-1	49	31	163	106
U-1A	6	4	.74	.49
U-6A	6	6	.60	.60
U-10A	3	1	.17	.06
CH-34	8	1	2.95	.37
CH-47	5	2	5.56	2.06
OTHER	184	50	61.77	17.58
TOTAL	1807	992	423.61	206.67

FROM: 1 JAN 68
TO: 22 AUG 69

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CHART 11 (AIRCRAFT RECOVERY)

Finally the Group has the mission responsibility for aircraft recovery from the field. In order to accomplish this mission, the direct support companies rig the downed aircraft and call upon the CH-47's assigned to the general support companies to perform the extraction. In the event a Chinook is not available from the general support company, a request is made to the nearest Chinook company to perform the extraction. The shaded area of the map shows the areas where the major number of extractions have been made. From 1 January 1968 to 22 August 1969, 1807 aircraft were rigged which had a total requisition cost of approximately 425 million dollars. A very high percentage of all helicopters which go down in South Vietnam are ultimately returned to service. This high recovery and return to service rate for helicopters is one of the pleasant surprises which was not forecast by even the most enthusiastic advocates of airmobile warfare.

AVIATION MATERIEL MANAGEMENT CENTER

MISSION

- 1. TO PROVIDE CLASS IIA COMBAT SERVICE SUPPLY SUPPORT FOR ARMY AVIATION AND OTHER DESIGNATED UNITS.**
- 2. TO OPERATE A CENTRALIZED AND AUTOMATED INVENTORY CONTROL CENTER FOR AIRCRAFT, AVIONICS AND AIR ARMAMENT REPAIR PARTS.**
- 3. TO PERFORM MAINTENANCE MANAGEMENT FOR SPECIFIED PROGRAMS.**
- 4. TO SERVE AS A STATISTICAL DATA COLLECTION ANALYSIS CENTER OF AVIATION SUPPLY AND MAINTENANCE LOGISTICAL MANAGEMENT INFORMATION.**

CHART 12 (AMMC MISSION)

So much for the overview of Group operations as a whole. In order to understand the recommendations which will follow it is necessary to explain the intensified vertical management system for aviation supply in Vietnam. The organization through which this is accomplished is the Aviation Material Management Center (AMMC), which is an integral element of the 34th General Support Group. It is commanded by a full colonel. It provides supply management service for all Army aircraft, avionics and air armament systems in the Republic of Vietnam. As such, it is the theater requisitioning agency, and also the point of entry for all aviation supplies and parts coming into the country through the two aviation depots it operates. Its mission is portrayed on the facing chart.

MAJOR FUNCTIONS

- . MAINTAINS COMMAND ASSET AVAILABILITY DATA AND DETERMINES REQUIREMENTS
- . ACQUIRES MATERIEL AND OPERATES DISTRIBUTION SYSTEM TO DSU'S
- . IDENTIFIES EXCESSES AND PROVIDES FOR DISPOSITION THEREOF
- . MANAGES THE THEATER AIRCRAFT REPARABLES PROGRAM
- . MAINTAINS USARV AIRCRAFT AND TURBINE ENGINE INVENTORY ACCOUNTS
- . MANAGES THE AIRCRAFT CONFIGURATION CONTROL PROGRAM

CHART 13 (FUNCTIONS
AVIATION MATERIAL MANAGEMENT CENTER)

The functions of AMMC as shown on the next chart portray the evolution of AMMC from the old Aviation Supply Point to the complex entity that it is today. Some highlights concerning these functions are:

1. The identification and disposition of excesses. This is an increasingly important task which is receiving considerable interest. As fleet density fluctuates and older aircraft are phased out of our system, the problem of retrieving the spare parts stocked throughout the country that are excess to current requirements becomes exceedingly difficult. During the first 7 months of CY 1969, the 34th Group identified and shipped to CONUS over 35 million dollars worth of serviceable excesses.
2. AMMC provides statistics, studies, and forecasts upon which to base command decisions. To the DSU's it furnishes 100% supply and shipment status on a daily basis. It has also instituted a program of review of DSU Authorized Stockage Lists to insure that all items stocked are valid, and if so, that the item is also on the AMMC ASL to insure timely support.
3. The retrograde of recoverable aircraft parts and components is becoming more dependent, and in some cases solely dependent, upon the repair and overhaul of unserviceable assets. AMMC monitors the retrograde program closely to insure the most expeditious return of repairables to the repair facility for overhaul and return to the supply system.

U.S. ARMY AVIATION MATERIEL MANAGEMENT CENTER

HQ
AMMC

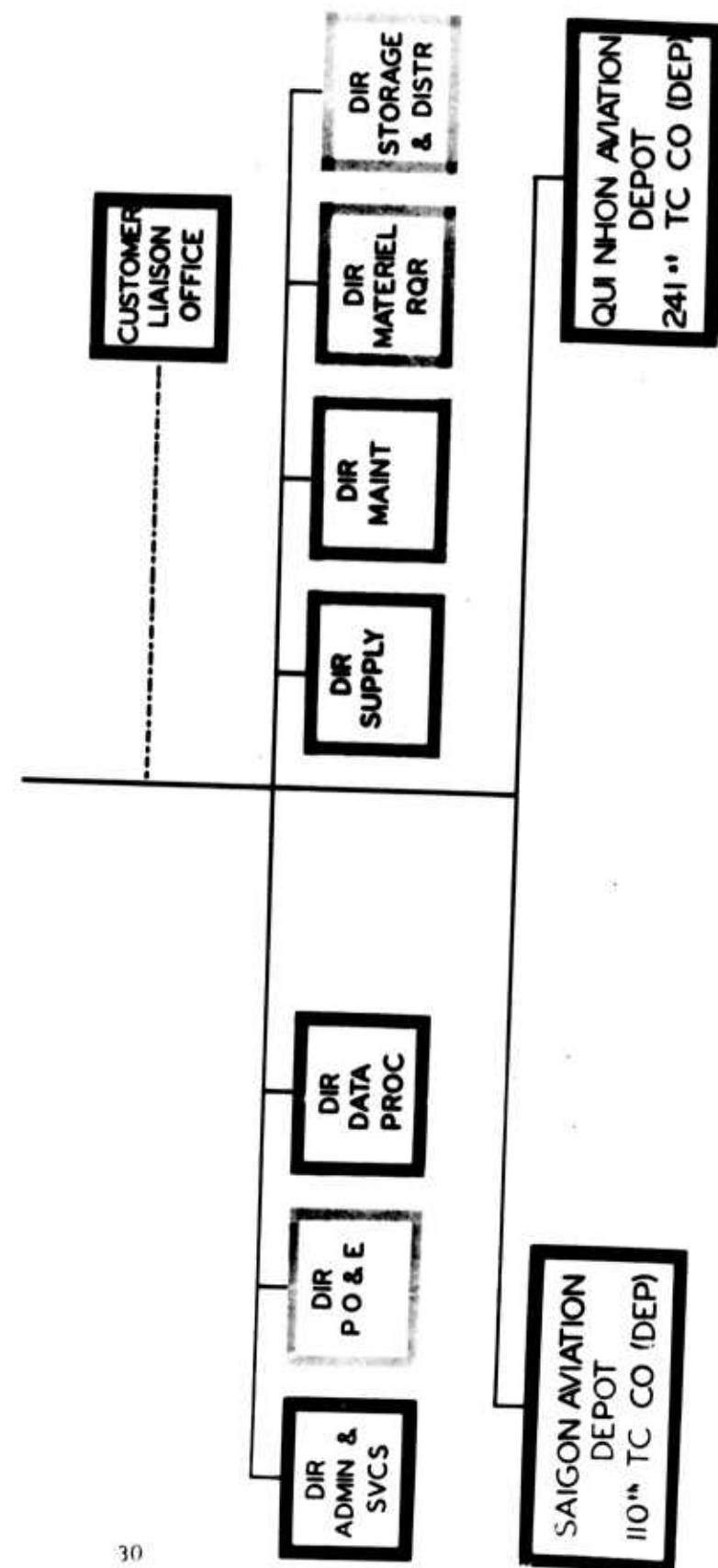


CHART 14 (AMMC ORGANIZATION)

1. These functions are accomplished with the organizational structure depicted on the facing chart. The Customer Liaison Office is not an assigned element of the AMMC, but contains liaison officers and NCO's from the more distant customer DSU's. These personnel provide a channel for the daily resolution of mutual problems on a face-to-face basis, and they monitor their units' EDP requisitions, special projects, and high priority shipments. There are 4 basic task elements of AMMC, broken down into Directorates.
2. The Supply Directorate has the Accountable Officer and maintains the Asset Balance File. It processes the daily volume of routine and high priority supply transactions from the customers and depots.
3. The Maintenance Directorate manages the USAFV aircraft inventory, the Theater Aircraft Repairable Program (TARP), and monitors the retrograde of unserviceables beyond the theater repair capability.
4. The Materiel Requirements Directorate provides the day-to-day inventory management of the Authorized Stockage List (ASL), the exceptional management of the Aviation Intensive Management Items (AIMI), and provides the daily staff interface with AVSCOM in the coordination of supply problems and forecast requirements.
5. The Storage and Distribution Directorate has staff cognizance over AMMC's 2 depots: the Saigon Aviation Depot, operated by the 110th Transportation Company at Tan Son Nhut, and the Qui Nhon Aviation Depot, operated by the 241st Transportation Company, located in the Long My Valley 8 miles West of Qui Nhon.

AMMC CUSTOMER UNITS

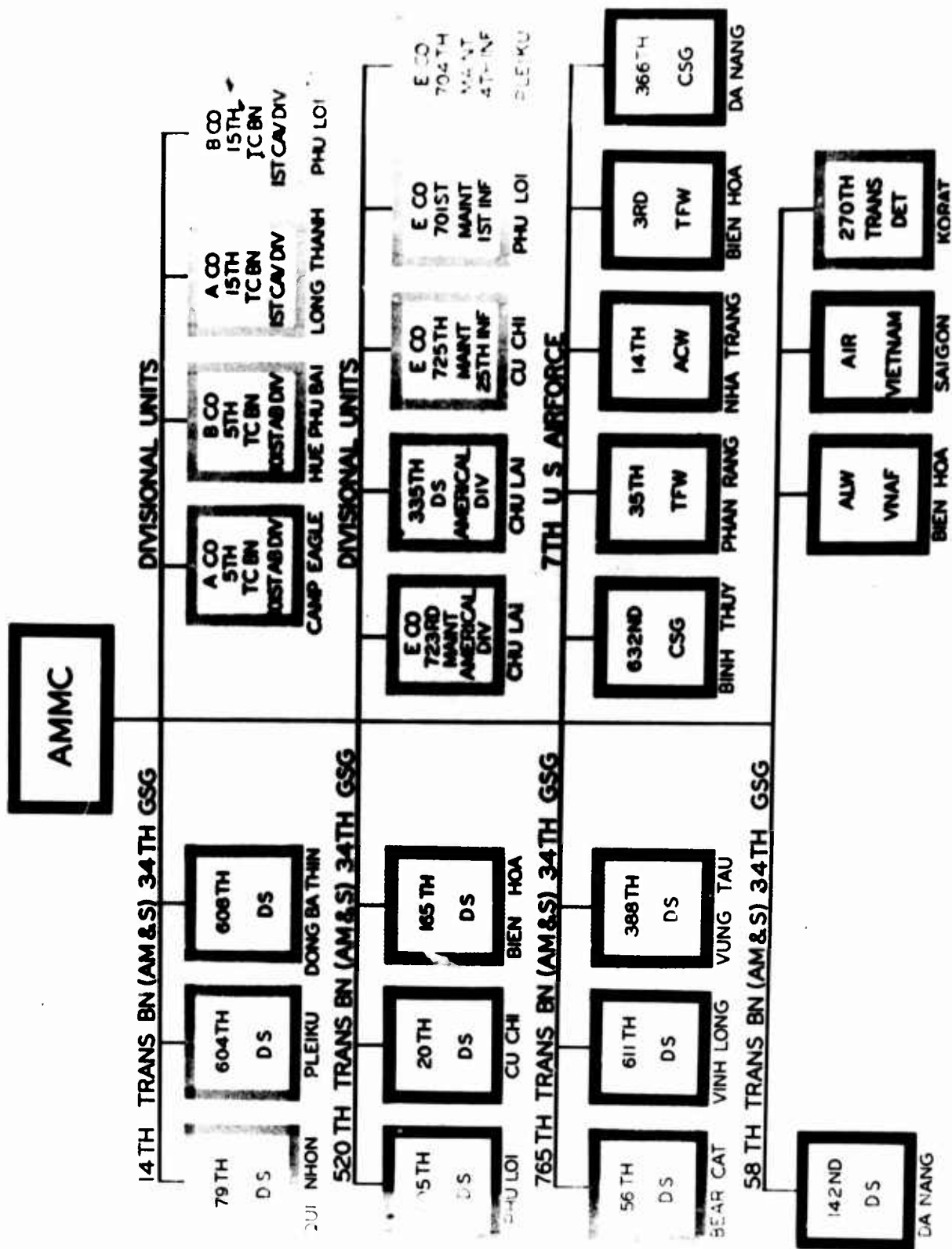
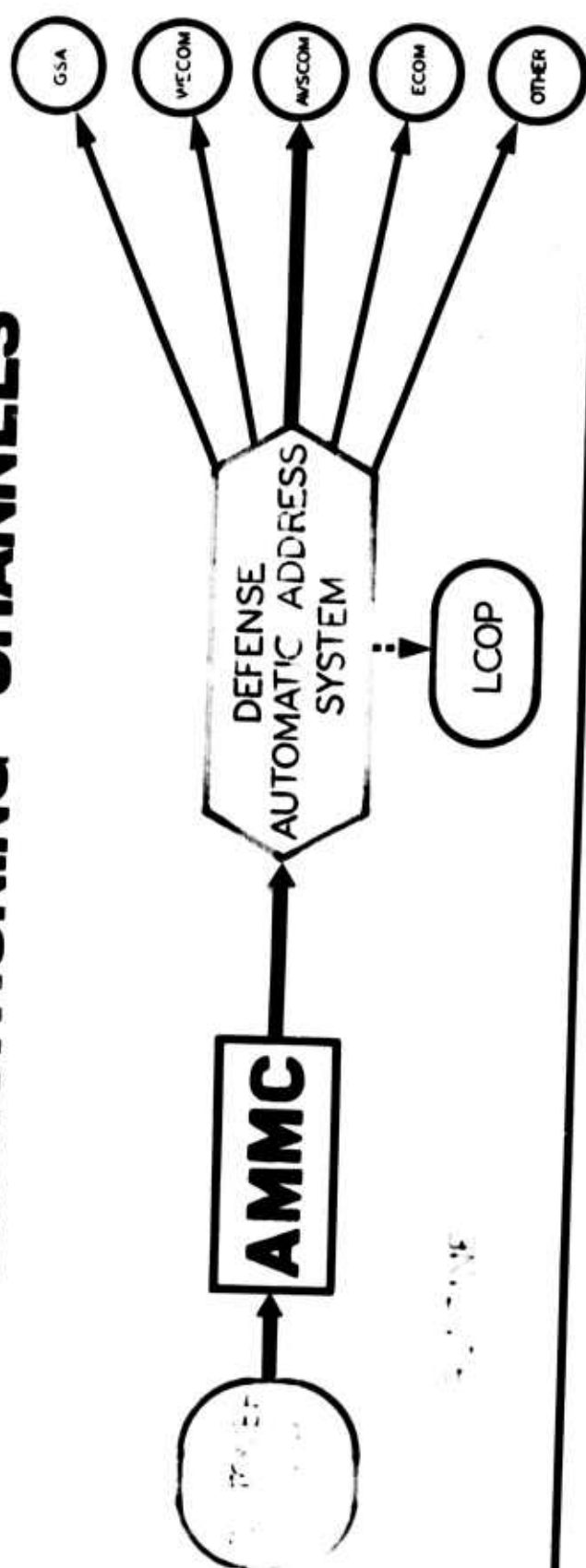


CHART 15 (AMMC CUSTOMER UNITS)

This next chart depicts the DSU's which requisition on AMMC.

1. AMMC's customers include 10 Aviation Direct Support Companies of the 34th General Support Group.
2. The 9 Divisional Direct Support Companies as follows:
 - a. 101st Airborne Div. - A & B Co, 5th Trans Bn
 - b. 1st Air Cavalry Div. - A & B Co, 15th Trans Bn
 - c. Americal Div. - 335th and "E" Co, 723rd Maint Bn
 - d. 4th Infantry Div. - "E" Co, 704th Maint Bn
 - e. 25th Infantry Div. - "E" Co, 725th Maint Bn
 - f. 1st Infantry Div. - "E" Co, 701st Maint Bn
3. The 7th US Air Force base supply activities which support their O-1 aircraft.
4. The 270th Transportation Detachment which serves Thailand, AMMC's newest customer, the Air Logistics Wing of the US Air Force which supports the Vietnamese Air Force, and Air Vietnam, the contract facility at Tan Son Nhut Airport.

REQUISITIONING CHANNELS



REDBALL

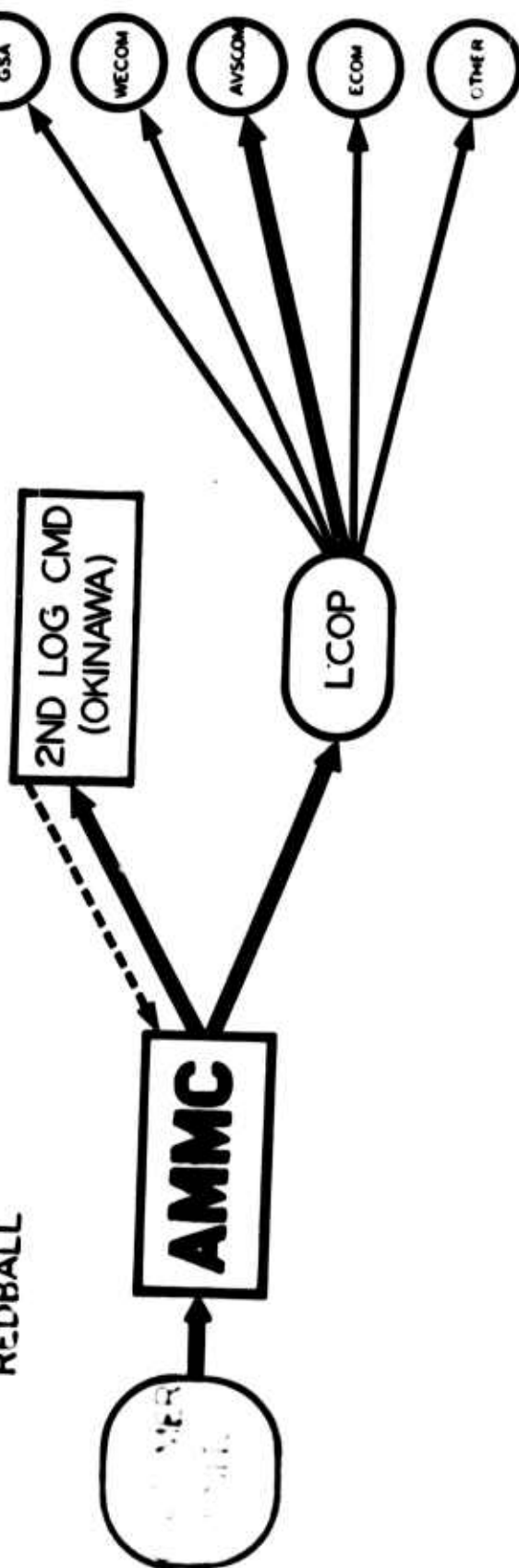


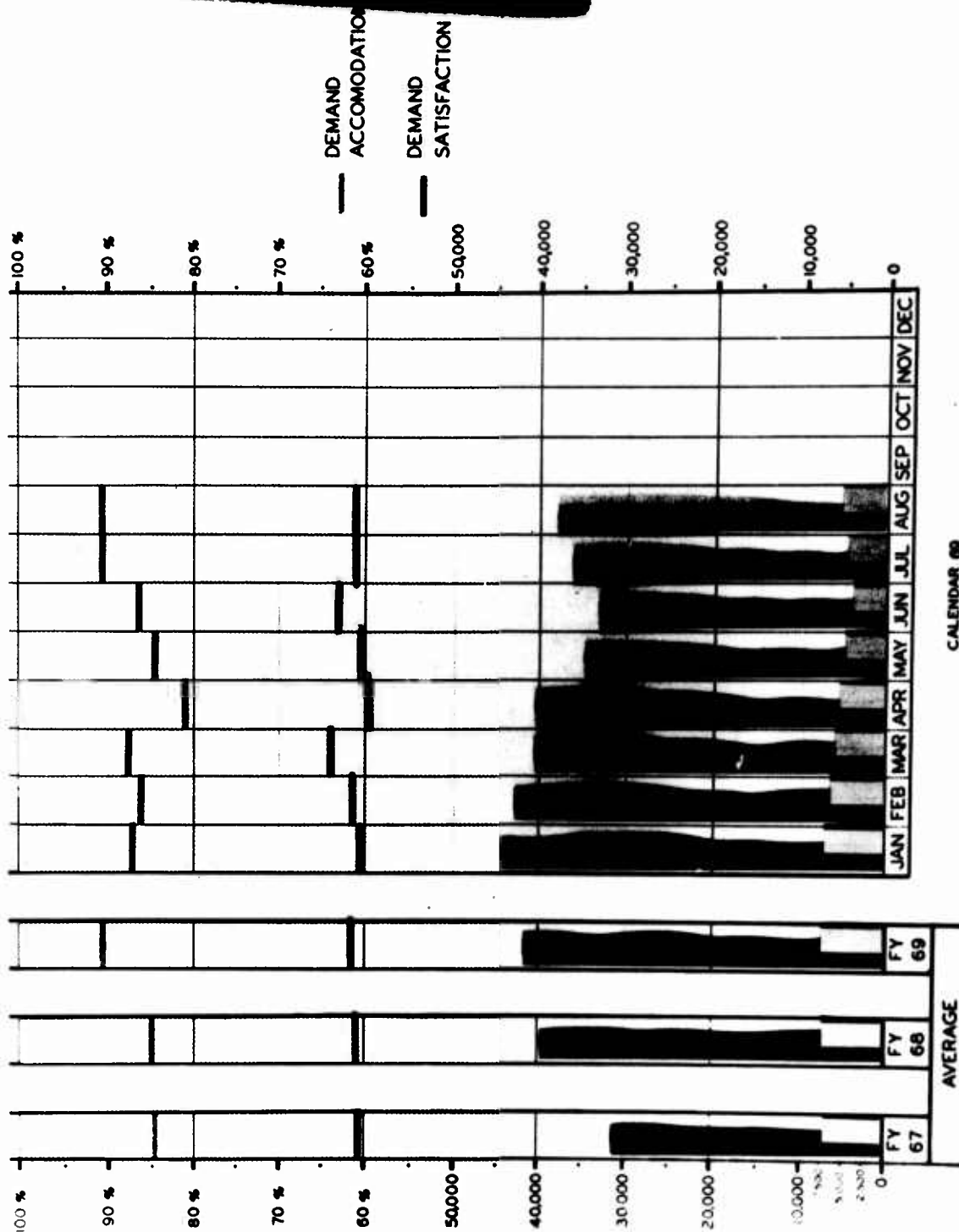
CHART 16 (REQUISITIONING CHANNELS)

This chart depicts channels through which AMMC customers order their supplies.

1. All requisitions are routed directly to AMMC, the centralized stock control activity. If the item required is on hand, AMMC directs release of the item to the customer from the nearest depot. If the item is on the ASL and not on hand, the requisition is backordered (due out) for subsequent release when replenishment stock is received. If the item requested is fringe (not on the AMMC ASL), and not on hand, the requisition is passed, along with replenishment requisitions, through the requisitioning system - via transceiver direct to the Defense Automatic Address System (DAAS). DAAS in turn re-directs the requisitions to AVSCOM or to the appropriate NICP, DSA, or GSA if they are for other than AVSCOM managed items. All of these requisitions are project coded as aviation requirements, and AVSCOM monitors the status of these throughout their life in the system. An image copy of every requisition is furnished to the Logistics Control Office, Pacific at Fort Mason, Calif., for inclusion in the Logistics Intelligence File.

2. In the case of high priority Equipment Deadlined for Parts (EDP) requisitions, the Red Ball Express system comes into play. These requisitions, either ASL or fringe, that cannot be filled from in-country assets, are transceived directly to the Logistic Control Office, Pacific, at Ft. Mason, Calif. This agency routes the requisitions directly to the responsible agency for action. AMMC also transceives a duplicate requisition to the 2d Logistical Command in Okinawa on a "fill or kill" basis. If Okinawa has the item it is normally received in about 6 days. However, they only fill approximately 2% of all requests. Turn around time for items from CONUS is only slightly longer - currently about 6.4 days.

SUPPLY PERFORMANCE



100% AT
100% AT

CHART 17 (SUPPLY PERFORMANCE)

The next chart summarizes the supply performance of the 34th General Support Group during CY 1969. The black bar indicates the number of lines carried on the Authorized Stockage List, and the gray bar those at zero balance at AMMC. Demand accomodation, the gray line, represents the percentage of all requisitions received which matched the ASL. Demand satisfaction, the black line, represents the percentage of those requisitions which were filled on the initial pass of the requisition through the machine cycle. In the fiscal year 1969, an average of 85 of every 100 requisitions received matched the ASL. Note in July and August this figure jumped to 92%. AMMC was able to fill 62% of these during the first pass through the supply cycle. It should be kept in mind that this is a machine generated figure and that the intervention of supply managers commonly improves this figure by 5 to 10 percentage points.

FLYING HRS PER MONTH/NORS PERCENTA

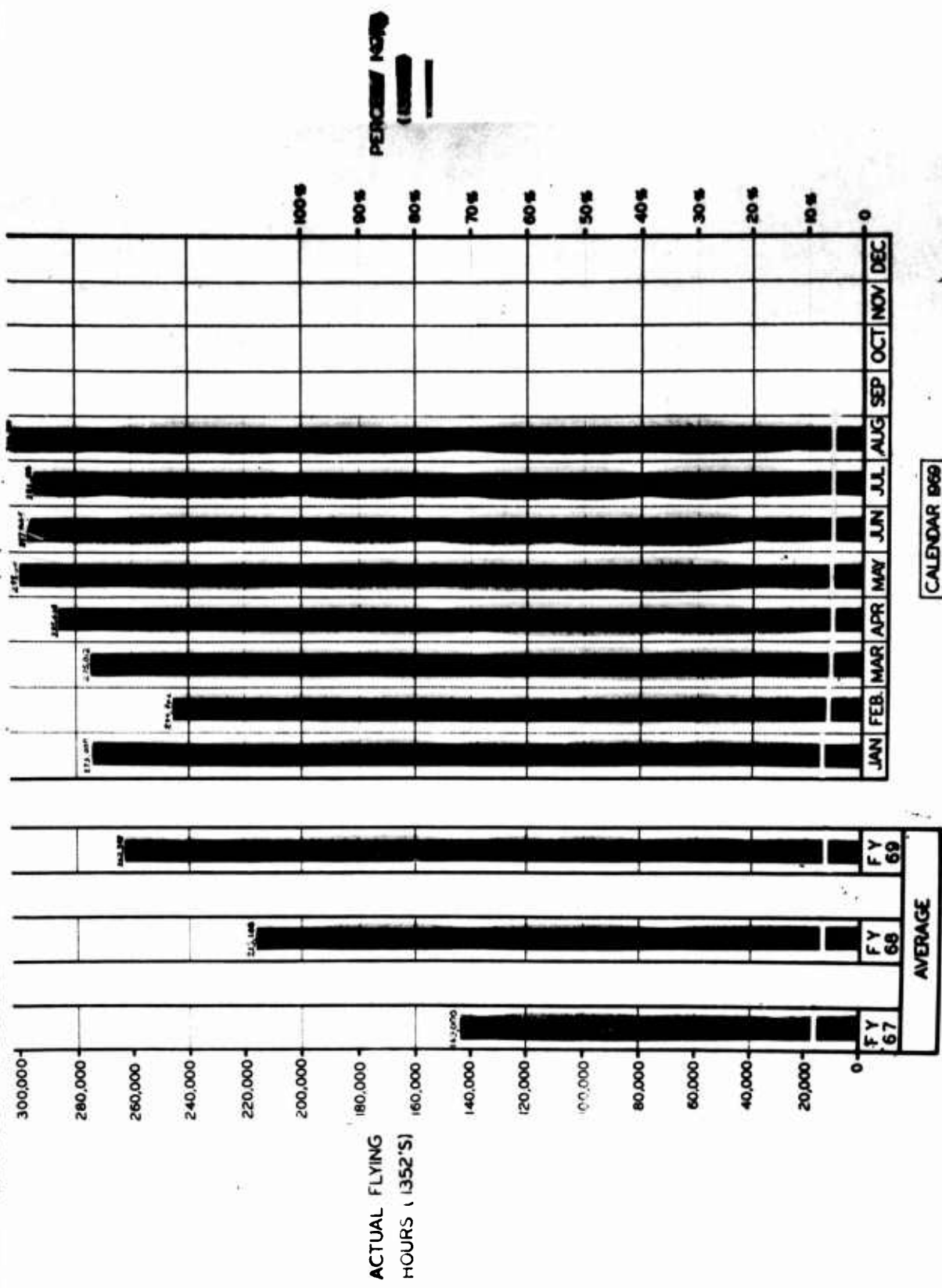
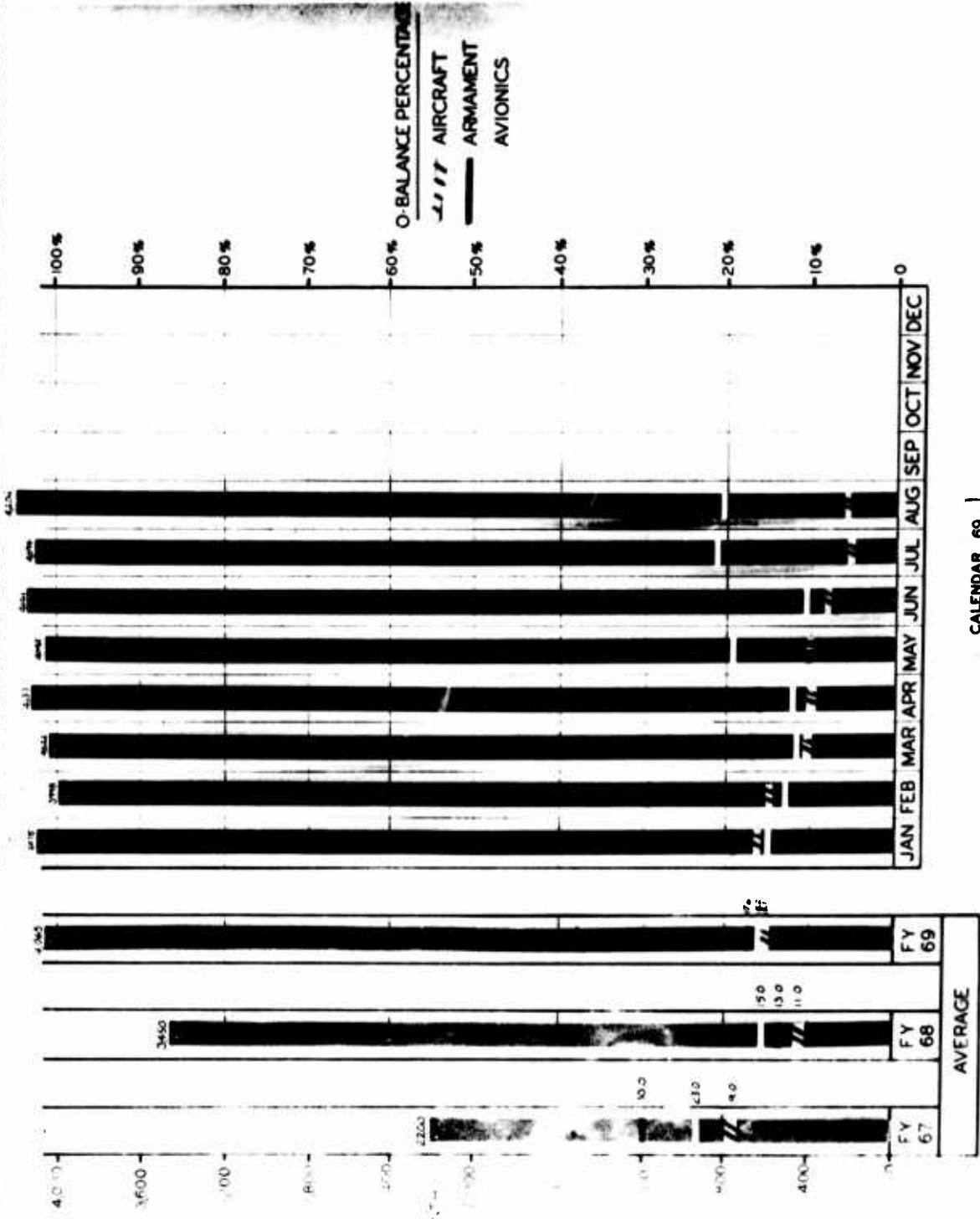


CHART 18 (FLYING HRS PER MONTH - NORS PERCENTAGE)

This chart relates the USARV hours flown to the monthly NORS rate (Not Operationally Ready - Supply), the percentage of time that aircraft are down for parts. The BARS indicate the actual hours flown in each month. The lines represent the percent of total aircraft fleet Not Operationally Ready while awaiting Supply. It is noteworthy that between 1967 and 1969 the average flying hours per month in USARV doubled while the NORS rate diminished to approximately one-half its value at the beginning of this period.

AIRCRAFT DENSITY • O BALANCE PERCENTAGE



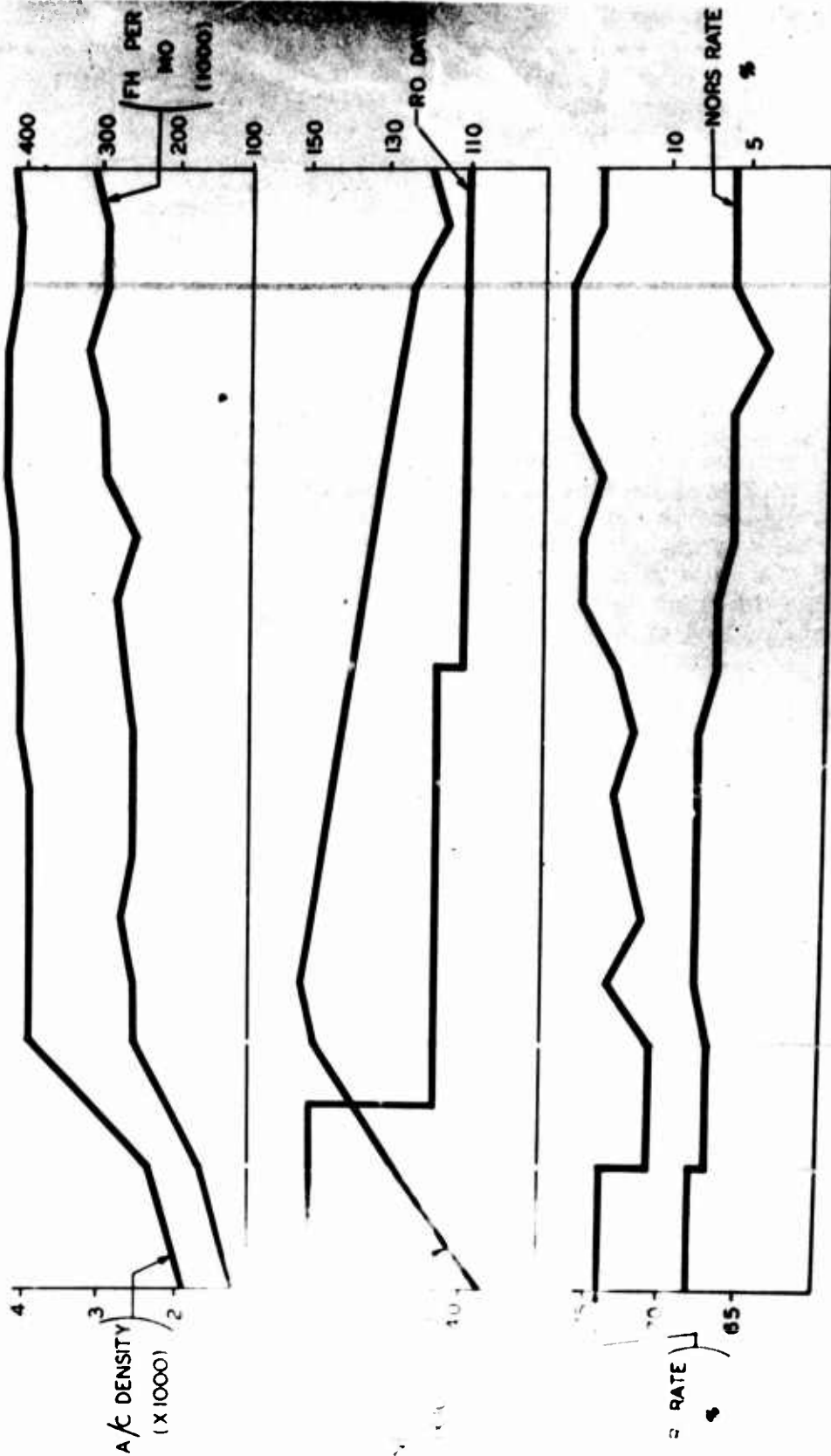
CALENDAR 69

CHART 19 (AIRCRAFT DENSITY -O- BALANCE PERCENTAGE)

This chart depicts the AMMC zero balance posture, by major commodity, as a percentage of the total ASL. As you can see, the fleet has virtually doubled over the past two years. At the same time there has been a continual decline in the zero balance rate. The introduction of new systems in the last quarter of calendar 68 such as the U21, OH6, AH-1G Cobra, and their attendant avionics and armament systems, caused the rate to rise during the middle of the fiscal year. It steadily declined during the first six months of 1969, but appears to have stabilized at about its present value.

RVN AIRCRAFT SUPPORT

SUPPLY



FY 67	J	A	S	O	N	D	J	F	M	A	M	J	J	A	FY 70
FY 68															

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CHART 20 (SUPPLY PERFORMANCE)

This chart summarizes the performance of the Aviation Supply System from July 1966 until the present. The requirements placed on the supply system are illustrated by the fact that the total number of Army aircraft in Vietnam increased from approximately 2000 in mid-1966 to over 4000 by mid-1969. In addition, the total number of monthly flying hours has increased from 120,000 to 310,000. Now let's look at the assets available to support this requirement.

The supply assets available to support the flying hours program are best depicted by the number of lines of supply, both ASL and fringe, and the quantity required to fill the pipeline, represented by the number of days of supply in the requisitioning objective (RO). Note that the number of lines of supply in 1966 was 34,000. The number of lines peaked out at 82,000 in January 1969. Through an intensive program of management review, inventories, and excessing, the number of lines have been reduced to 50,000, of which 33,000 are ASL and 17,000 are fringe. In 1966, the requisitioning objective was 60 days stockage plus 90 days order and ship time. Today, the requisitioning objective is down to 110 days. A 60 day stockage objective is still required, but the order and ship time has been reduced to 50 days.

The degree to which the supply system has accomplished its mission is represented by the Operationally Ready (OR) and the Non-Operationally Ready - Awaiting Supply (NORS) rates. Note that there has been a steady upward trend in operationally ready aircraft and a continuing downward trend in the NORS rate. Demand accommodation has increased from 75 percent in 1966 to a current rate of 91 percent. Demand satisfaction has increased from 47 percent to 63 percent over the same period. If Red Balls are included, this last figure would be increased to 69 percent. In summary, the number of aircraft and flying hours have increased, while at the same time favorable OR and NORS rates have been maintained utilizing less assets.

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CHART 21 (MAINTENANCE PERFORMANCE)

This chart summarizes the performance of aircraft maintenance support over the past three years in Vietnam. The number of aircraft and flying hours depicted are the same as portrayed on the preceding chart because they are as much an indicator of the maintenance effort as they are of the supply effort.

The maintenance capability available to satisfy the flying hour program can best be depicted by the number of military personnel on hand and the number of civilians by which augmented. Note an increase in military strength from 2300 to 4100 followed by a slight reduction to 3700. Contract civilians and field service representatives have followed a similar pattern. The number of civilians that have been utilized increased from almost none in 1966 to a high of 2100 in FY 1969. The present strength is approximately 1900.

The degree to which the maintenance effort has accomplished its mission is represented by the Operationally Ready (OR) and the Not Operationally Ready - Field Maintenance (NORTH) rates. Although there has been a continuing increase in the number of aircraft and flying hours, there has been an upward trend of the OR rate for aircraft, and a downward trend in the NORTH rate.

SUBJECTS FOR DISCUSSION

- 1. CATEGORIZATION OF MAINTENANCE**
- 2. INTENSIFIED VERTICAL MANAGEMENT
FOR EXPENSIVE OR CRITICAL
WEAPONS SYSTEMS**

PART II

Commentary on the Logistical Support System for Army Aircraft in RVN.

Against the preceding background on what the 34th Group is, what it does, and how it does it, I would like to summarize some of my personal impressions regarding logistical support of Army aircraft in Vietnam. The ideas which I will discuss here are not new. They are, however, supported by the collective experience of myself, my subordinate commanders, and my staff. These ideas are developed in greater detail in the 34th Group input to the "USARV Logistics Review" expected to be distributed in January 1970. The Aviation Supply and the Aviation Maintenance Systems presently in use in Vietnam are reviewed and analyzed in Annexes F and J, respectively, of that study. I will not attempt to brief the study because it is far too detailed and its scope too great for the purpose of this briefing. Instead, I propose to select only two items from those discussed in our input to the study which I think offer sufficient promise of improving the aviation logistics system to justify their further study by agencies with the resources necessary to determine their full impact. The two subjects which I have chosen for discussion are listed on the facing chart.

CATEGORIES OF MAINTENANCE

The first of these ideas is the direct outgrowth of our experience in Vietnam. The maintenance system in Vietnam today is theoretically based on five categories of maintenance, i.e., operator, organization, direct support, general support, and depot. In practice the lines of demarcation are blurred. The differentiation between the direct support and general support categories of maintenance is the most difficult to maintain. Much of the work-load of direct support companies is, in practice, organizational level maintenance. Because this overburdens the direct support companies, general support maintenance units are being required to do much of the direct support mission. This echelonment upward of maintenance activity is not the result of inefficiency on the part of operators. It arises, in part, from the fact that much of the maintenance normally done by operators can be safely deferred. The irregular nature of combat activity often requires that this be done until such time as a more serious fault in the equipment develops which requires that it be work-ordered to the direct support level of maintenance. General support units often wind up doing both organization maintenance and direct support maintenance, either as overflow from the direct support units or because one item on the aircraft, such as sheetmetal repair, requires this level of support. The practical effect is that the entire job gets work-ordered to the general support level. Time delays are involved in work-ordering the aircraft or component back and forth through the direct support unit and the general support unit. Special tools are duplicated and critically short skills are spread thin resulting in over-commitment at one level with idle time at another.

The old rule, often practiced by the Ordnance Corps in maintenance of vehicles, that higher echelons of maintenance should not accept workorders for equipment with lower echelon maintenance unaccomplished is simply not feasible for aviation when combat operations rely heavily on airmobility. If it had not already been our practice to accept any echelon of maintenance necessary to achieve the Operational Ready rates required to support the pace of combat operations, I am sure that the practical considerations of requirements vs. availability would have forced us to adopt such a policy.

Another fundamental factor underlies the shift in the echelonment of maintenance. The maintainability design of Army aircraft has progressed to the point where the principal maintenance function to be accomplished in the theater of operations is the replacement of assemblies and metal work to repair combat or accident damage. Repair of the basic airframe or fuselage structure, together with selected component repair, constitute the remainder of the maintenance to be performed in-country. The assemblies themselves are either finite life or time-change items that can be returned to CONUS for overhaul or reclamation. The net effect is that, in Vietnam, maintenance activity tends to compartmentalize into three categories which I will call:

DE FACTO CATEGORIZATION OF AVIATION MAINTENANCE IN THE REPUBLIC OF VIETNAM

- 1. USER MAINTENANCE**
- 2. SUPPORT MAINTENANCE**
- 3. DEPOT MAINTENANCE**

- First: User Maintenance (Done by owners and operators of Aircraft)
- Second: Support Maintenance (Done by DS and GS levels of maintenance)
- Third: Depot Maintenance (Done mostly in CONUS with limited depot support being provided by the Floating Aircraft Maintenance Facility, the Corpus Christi Bay, anchored off Vung Tau)

I suggest that the feasibility of formalizing as doctrine this de facto categorization be studied. This idea is not new. The de facto 3 level maintenance break-out was recognized as early as May 1968 by USARPAC in a letter to DCSLOG, DA. USARPAC recommended that the subject be studied, along with several others, by a Department of Army appointed study group. I strongly support this view. Priority attention should be given to combining DS and GS maintenance categories.

Several advantages appear obvious. Shop stock supply activities could be combined. Skills needed to do required maintenance would not as likely be wasted because of tool or parts shortages and the peaks and valleys in requirements which lead to gross inefficiencies. Less total numbers of special tools, shop sets, and test equipment would be needed. Many more advantages could be enumerated, but, obviously, such a move cannot be made in isolation from the remainder of the logistics support system. Far reaching changes and realignments would be in order. The impact on organizational and depot levels of maintenance will have to be determined. The supply system will probably have to be tailored to support it. Many doctrinal and technical publications would be affected. The personnel and training implications should also be examined. All of these will have to be evaluated in the light of future logistics concepts for the Army as a whole. Nevertheless, I believe that there is sufficient basis in our Vietnam experience to justify a reexamination of our current concepts about the categorization of aviation maintenance.

I recommend that a Department of the Army directed study be initiated to examine all the ramifications of implementing this concept. This study must recognize the actual in-being organization, functions and skill levels of military units, as opposed to published doctrine and current concepts of the present Tables of Organization and Equipment and the Maintenance Allocation Charts. Alternative organizations should be examined. I would expect that the study will require a massive effort, involving operations research techniques, cost-effectiveness trade-off studies, and the use of mathematical models of alternative organizations. Such a task is obviously beyond the capability of in-country staffs. I would, however, recommend that the steering committee or Project Advisory Group (PAG) for the study include representatives of both USARV (preferably the 34th General Support) and USARPAC.

INTENSIFIED MANAGEMENT FOR EXPENSIVE OR CRITICAL WEAPONS SYSTEMS

The next point I would like to discuss is the intensified vertical management system which has been developed for the support of Army aviation in Vietnam. I regard this as one of the most fortunate developments in logistics in recent years.

The layered system of supply was simply so massive that responsiveness was not rapid enough to care for the needs of the operators of high critical equipment such as aircraft. Because of the command emphasis on aircraft availability, lower echelons of supply and maintenance personnel were forced to hoard parts or resort to other methods to beat the system. Having an item on hand when needed is a matter of survival at this level as pressure is constantly being exerted by commanders to keep equipment operational. No amount of emphasis will forestall this from happening unless the user of the repair parts is assured, through experience, that the supply system will produce the required part in a timely manner.

Aviation logistics in Vietnam has progressed a long way toward overcoming this distrust of the system. Stovepipe requisitioning channels and intensive, vertical management by single commodity oriented managers has begun to produce the confidence in operators that the supply system will respond. During several recent campaigns to get operators to turn-in surplus serviceable parts, several of the 34th Group DSU's were inundated with so many parts that they had great difficulty in handling them. One DSU, the 79th Transportation Company at Qui Nhon, reported that for over a period of more than 3 months it hauled 3 to 4 stake and platform truck loads of parts daily from its tech supply turn-in to its supporting depot or to its adjacent air terminal for evacuation to CONUS. This quantity of "rat holed" aircraft parts was turned in by operators of only slightly more than 300 aircraft. Largely because of campaigns to get operators to turn in surplus parts, the 34th Group has identified and shipped to CONUS approximately 35 million dollars worth of serviceable excesses during the first seven months of CY '69. This is cited only to illustrate the size of the problem and the price we have been paying for a low confidence level in a supply system that wasn't meeting the needs of the user.

The improved efficiency and confidence in the system is primarily the result of intensified vertical technical and command management techniques. These techniques include the one-stop maintenance concept whereby the aircraft operator can get service for all his aircraft systems and subsystems at one location, the creation of in-country commodity managers at AMMC which roughly parallel the commodity managerships at AVSCOM, Project OFP (Stovepipe) which passes requisitions directly from the in-country ICP to the NICP, the use of dedicated, single purpose aircraft to move parts, and the automation, al-

though limited, of the in-country supply system. Additionally, the AMMC project managers for the principal aircraft systems are represented in-country. These project manager representatives have been an especially important means of identifying potential problems and insuring that the most competent agency is aware of the problem and taking action to solve it. They have also been especially valuable in rapidly securing urgent engineering, supply, and cataloging information from responsible CONUS agencies. It is my opinion that Vietnam experience has completely justified the special intensified management system for Army aviation logistics. I believe that the additional costs incurred, whether they be in duplicate stocks, extensive communications, or larger numbers of people, have been recovered many times over in the increased availability of expensive aircraft weapons systems.

Further improvement still needs to be made by authorizing and installing ADP/EAM equipment of sufficient size, speed, and capacity at each direct support supply activity (DSSA) and in-country depot to handle requests and requisitions on a near real-time basis and to bank performance data for management purposes. This will require machine capability to run a complete supply cycle daily as well as produce numerous reports. This equipment must be tied together with a rapid and accurate communication system which will provide sole-user transceiver service for transmitting requisitions and the maintenance of a centralized country-wide inventory control. This program should not be delayed longer. I am personally confident that the cost of the necessary equipment to achieve this capability could be recovered in a very short time.

A direct delivery transportation system that eliminates transshipment points and congested cargo terminals should also be a central feature of any supply system which supports the quantity of aircraft and the activity rates which are characteristic of operations in Vietnam today. The utility and economy of dedicated aircraft is being demonstrated by the operation of a C7A aircraft by the 14th Battalion in the II Corps Tactical Zone. The full capacity of a dedicated Caribou, provided from assets of the 1st Field Forces, Vietnam, is completely utilized on a 3 times a week basis moving high priority aircraft parts from and between the depots and the direct support supply activities throughout the II Corps Tactical Zone.

The concept of customer delivery, while a goal of COSTAR, has never been implemented in Vietnam to the degree envisioned. This is another area where improvement is in order.

Much more can and should be done. But the purpose of my briefing is not to lobby for the needs of aviation in Vietnam. Aviation, on the whole, has gotten well of its ills. Rather, I propose to convince you that intensive vertical

management within the theater of operations has merit for many systems. All of the components of a management system for aircraft are obviously not suitable or necessary for all weapons systems. Other systems have different problems demanding different solutions. This fact is the fundamental reason that especially expensive or critical weapons systems cannot be efficiently managed within the layered, centralized, and procedurally oriented logistic systems which work so effectively with massive tonnages of essentially homogeneous supplies of low unit cost.

The requirement for intensive management, however, needs to be foreseen and planned for. The creation of a management system such as has been built up for aviation in Vietnam requires a great deal of time. The system evolved over a period of several years, with many false starts and much backing and filling. Other wars in other places may not allow the time to evolve the management apparatus which critical systems may require. It is the nature of the research and development and the materiel production cycles that special management techniques are created to handle the problems peculiar to each new system. What is often not recognized is that extensions of these same special management techniques into a theater of operations is desirable, and sometimes mandatory, for certain weapons systems. The impact often extends directly into the operating elements. This leads me back to the point of my discussion, i.e., that contingency planning for a theater of operations should take early cognizance of the presence of expensive or critical weapons systems. Plans should be drawn to accommodate the special data and management systems required for their efficient utilization. When management systems are created on an ad hoc or interim basis, there tends to occur a proliferation of uncoordinated agencies and activities which cause confusion and diffuse responsibility. I suggest that if logistic contingency planning for Vietnam had begun with an acceptance of aircraft as sufficiently expensive and critical to justify the early establishment of an intensified vertical system of management and data collection, much of what has come to pass could have been accomplished in a more orderly fashion. Much patch-work and quick-fix activity could have been avoided with all the attendant inefficiencies. This has been particularly true of aviation supply activities. Because of inadequate data management and reporting systems, our early procurement efforts were plagued with erratic requirements which came about because we were often late in recognizing a need. This created an industrial dynamic wave phenomena which ran throughout the supply system. Surges were created all along the line and over-stockage and under-stockage resulted at various points because of the failure of the management system. Crash procurement programs were the result, often with tremendous dollar loss to the taxpayer. The current management system has been successful in smoothing these peaks and valleys, saving millions of dollars while providing higher operational ready rates.

It seems to me that we ought to assure ourselves that we are profiting from all this expensive experience. I heartily support the concept of the JCD Joint Logistics Review Board headed by General Besson. I expect that it will

find a very fertile field to explore in examining the manner in which we have introduced new items of materiel into the overseas theater. Although the basic directives, such as AR 700-70, seem quite clear in stating that our objective is to field new items with adequate timely support, there is a tendency to let the urgency of need in the theater for the major item outweigh logistical support considerations. Because of this, expediting the deployment of the end item is often accomplished by altering the sequential progression of support preparations. This results in important interfaces being slipped or missed completely. This is most apparent in the training system which rarely provides a large enough cadre of support personnel to the theater with training on a particular aircraft or sub-system in advance of, or concurrent with, the introduction of an item. Another problem is the failure to recognize the need for changes in unit TOE's caused by introducing new systems. Many times common tools and test equipment not previously needed are required by the addition of new armament or electronic items, yet the item is fielded and the action to get the support equipment is begun belatedly. Much of these difficulties could be avoided by realistic scheduling with earlier and wider distribution of the master program and adherence to the deployment and support planning schedules. Even so, it will be necessary to place continuing emphasis on identification of critical interfaces in the theater of operations after the item has been deployed. The vertical management concept, if extended to the ultimate user, can greatly expedite the identification and reporting of problems as they develop.

In order to prevent future theaters of operation from experiencing the same growing pains which we in Army Aviation went through in Vietnam, I recommend that the Department of the Army appoint a management sciences team or study group to identify the systems or classes of systems which, because of cost or criticality, appear likely to require special management attention when fielded overseas. This group should be tasked to review those contingency plans which include these systems. It should prepare recommendations for the Department of the Army which will assure that contingency planners and system managers adequately plan for the smooth introduction of major weapons systems into a theater of operations. The group should also conduct a review of basic directives, such as AR 700-70, and propose necessary changes.

A major benefit to be derived from such an effort should be the early acceptance by theater commanders and senior staffs of the necessity for special management arrangements. Such arrangements are sometimes viewed suspiciously as violating the monolithic integrity of the theater command and staff structure. If these fears could be allayed beforehand, much tedious justification, some of it long after the requirement has become obvious, could be avoided. The end result should be greater efficiency in the management of expensive or critical weapons systems from the beginning of hostilities.

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